USCG 57mm / Mk 3 Gun Mount

Test, Evaluation & Certification Program

Lieutenant Timothy Hacke

United States Coast Guard

Deepwater Sponsors' Representative

Today's Presentation

- ***Introduction***
- ***Deepwater Medium Caliber Gun Requirements***
- ***Brief Overview of the Bofors 57mm Gun***
- ***57mm Ammunition***
- ***57mm Gun Integrated Product Team***
- ***Partnership with NAVSEA***
  - Naval Surface Warfare Centers Dahlgren & Louisville
  - United Defense & Bofors AB Technical IPT Members

USCG Deepwater Program

Notional ICGS 3D Drawing of the National Security Cutte

USCG Deepwater Program

The National Security Cutter (NSC) System Performance Specification identifies multiple requirements for limited general defense operations. The requirements include: operating in a low-threat environment, ability to fire warning and disabling shots against targets of interest, engaging surface threats achieving mission kill or high speed coastal patrol craft

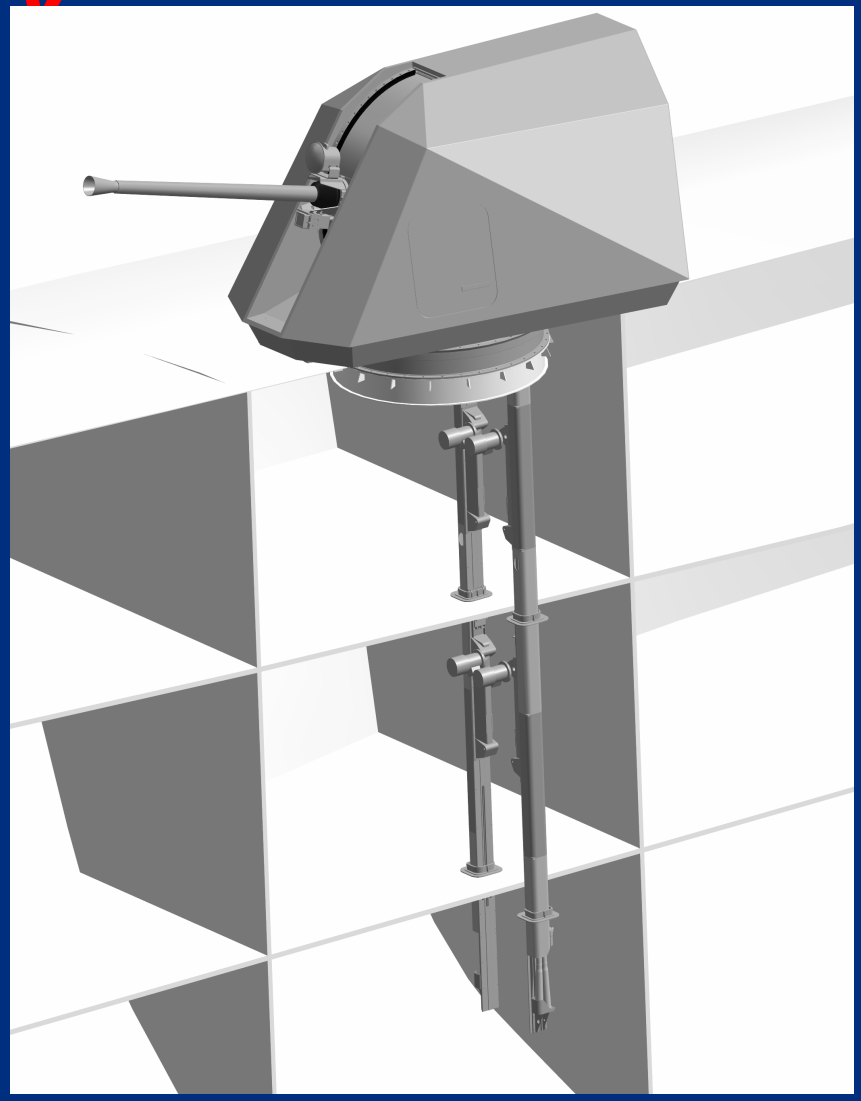
Notional ICGS 3D Drawing of the National Security Cutte

USCG / USN Medium Caliber Gun IPT Time Line

- **October 2001 – USCG Deepwater Sponsors' Office & OPNAV Form Medium Caliber Gun IPT to review candidate systems**
- **June 2002 – NAVSEA Receives Deepwater Gun R & D Funds**
- **June 2002 – ICGS Awarded Deepwater Contract**
- **August 2002 – USCG / NAVSEA Gun IPT Established**
- **Sep 2002 ~ August 2003 – Engineering & Log Review**
- **May 2003 – NAVSEA Receives Additional Deepwater Funds**
- **September 2003 – 57mm Gun Presented to WSESRB**
- **November 2003 ~ Present – Live Fire Testing**

57 mm Gun System Summary

- 3 P-ammunition Gives Increased Tactical Flexibility And Ammunition Effect
- On-mount Muzzle Velocity Radar
- Computer Controlled Burst Pattern
- Improved Local Control
- Digital Interface for Increased Flexibility And Future Upgrading
- Advanced Self Diagnostic BITE
- Possibility to Monitor Gun Status From Gun Control Panel While Operating the Gun From a Multi Function Console



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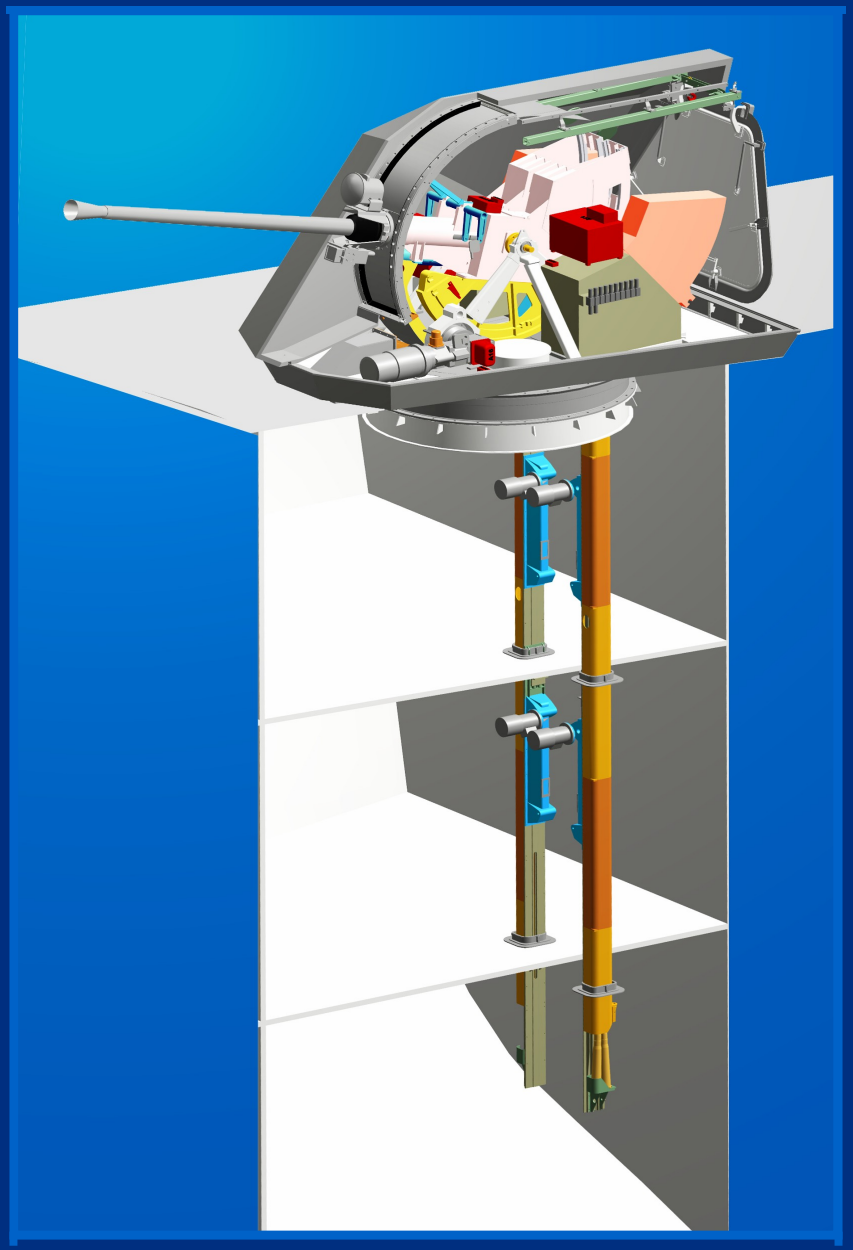
57mm Mk 3 Gun Basics

- Fires @ 220 Rounds Per Min
- 120 Rounds in Mount
- 2 separate systems allow two types of ammunition simultaneously in the gun
- Automatic Reloading
- Controlled and operated from GCP/GCC or from the gun FCS
- 17 Km Maximum Range
- Selectable Hoist Length

Source: Bofors Defence AB



Ammunition Types

- **Target Practice (BL&P)**

- **Pre-Fragmented Programmable Proximity Fuze (3P)**

- High Capacity Extended Range

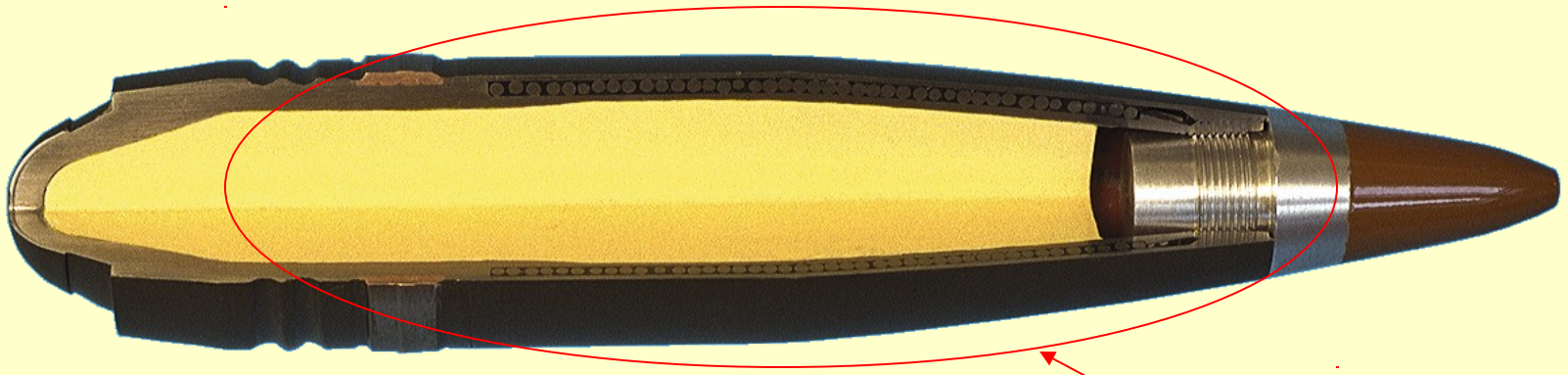
- Pre-Fragmented High Explosive

57-mm Ammunition

- **Pre-fragmented, Programmable, and Proximity Fuzed (3P)**
  - Pre-fragmented warhead (3-mm dia tungsten spheres)
  - Programmable in 6 modes
  - Proximity fuzed
  - Designed for programmable firing in the MK 3 automatic gun
  - Design based on Bofors 40-mm 3P round
- **Target Practice (TP)**
  - Inert filled, solid projectile body
  - Intended for target practice firings
  - Disabling fire

57 mm 3P shell

(**P**re-fragmented **P**rogrammable **P**roximity fuzed ammunition)



Weight of shell	2.4 kg
Weight of HE (Octol or PBX)	0.46 kg
Weight of Tungsten pellets	0.56 kg
No of pellets App.	**2400**
Fuze	Programmable in 6 function modes

Testing & Evaluation of the Gun Mount

- **June 2002 ~ August 2003: NSWC Louisville**
  - **Logistics Demonstration Completed**
  - **Engineering Assessment Report Completed**
  - **Initial 57mm Gun Training Completed (O & I Level)**
  - **57 MM Gun Technical & Management IPT Established**
- **September 2003 ~ Present: NSWC Dahlgren**
  - **Begin Live Fire Testing – Nov 03 / Feb 04 / Mar 04 / May-June 04**
  - **T & E of Gun Mount and Ammunition**
- **September 2003: WSESRB**
  - **Return October 2004**
- **Additional USN Programs Interested in 57mm Gun Test Data**

USCG & NAVSEA Teamwork

CPO Joe Washabaugh (USCG) removes a 57mm gun barrel from the Bofors 57mm Mk 3 Gun Mount @ United Defense's Facility in Louisville, KY.

Engineering Assessment @ NSWC Lo

- Water Intrusion Test (above)
- Endurance Test
- Training (O & I)
- Logistics Review
- ORDALT Analysis

Installation of Gun Mount

Test Firing @ NSWC Dahlgren

Test firings conducted: November 03 / February 04 / Mar

Summary

- **USCG working with USN PEO IWS 3C**
  - Excellent USCG / NAVSEA Teamwork
  - United Defense & Bofors AB Providing Outstanding Team Support
- **Bofors 57-mm / MK 3 Gun & Ammunition**
  - Gun WSESRB & Certification
  - 3P & TP Ammunition Certification
  - Gun Engineering Assessment
  - Logistics Assessment
  - Continue Live Test Firing

57mm Gun & Ammunition Team

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